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Safety Precautions

Ursalink will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- The device must not be disassembled or remodeled in any way.
- Do not place the device outdoors where the temperature is below/above operating range. Do not place the device close to objects with naked flames, heat source (oven or sunlight), cold source, liquid and extreme temperature changes.
- The device is not intended to be used as a reference sensor, and Ursalink will not should responsibility for any damage which may result from inaccurate readings.
- The battery should be removed from the device if it is not to be used for an extended period. Otherwise, the battery might leak and damage the device. Never leave a discharged battery in the battery compartment.
- The device must never be subjected to shocks or impacts.
- Do not clean the device with detergents or solvents such as benzene or alcohol. To clean the device, wipe with a soft moistened cloth. Use another soft, dry cloth to wipe dry.

Declaration of Conformity

Ursalink AM100 series is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



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Revision History

Date	Doc Version	Description
April 7, 2020	V 1.0	Initial version
May 19, 2020	V 1.1	APP pictures replacement



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1. Overview

1.1 Description

AM100 series is a compact indoor ambience monitoring sensor including motion, humidity, temperature, light, TVOC, CO2, barometric pressure for wireless LoRa network. AM100 series is a battery powered device and is designed to be wall-mounted. It is equipped with NFC (Near Field Communication) and can easily be configured via a smartphone or a PC software.

Sensor data are transmitted in real-time using standard LoRaWAN protocol. LoRaWAN enables encrypted radio transmissions over long distance while consuming very little power. The user can obtain sensor data and view the trend of data change through Ursalink Cloud or through the user's own Network Server.

1.2 Features

- Robust LoRa connectivity for indoor or HVAC environments
- Integrated multiple sensors like temperature, humidity, light, air quality, etc.
- Easy configuration via NFC
- Visual display via E-Ink screen
- Standard LoRaWAN support
- Ursalink Cloud compliant
- Low power consumption (about 1 year battery life)
- Standard AA alkaline battery

1.3 Specifications

Model	AM102	AM100	
LoRaWAN			
Frequency	EU433/CN470/IN865/RU864/EU86	58/US915/AU915/KR920/AS923	
Tx Power	20dBm		
Sensitivity	-147dBm @300bps		
Mode	OTAA/ABP Class A		
Antenna	Embedded Ceramic Antenna		
Sensors			
Temperature			
Range	-20°C to + 70°C		
Accuracy	0°C to + 70°C (+/- 0.3°C), -20°C to 0	0°C (+/- 0.6°C)	
Humidity			
Range	0% to 100% RH		
Accuracy	10% to 90% RH (+/- 3%), below 10	% and above 90% RH (+/- 5%)	



PIR				
Detection Area	94 ° Horizontal, 82 ° Vertical			
Detection Distance	5 m			
Output Range	0-65535			
Light				
Range	60000 lux (Visible + IR, IR)			
Accuracy	±30%			
CO ₂				
Range	400 - 5000 ppm			
Accuracy	±30 ppm or ±3 % of reading			
тиос				
Range	0 - 60000 ppb	N/A		
Accuracy	±15 %	N/A		
Long-term Stability	1.3 % accuracy drift per year			
Barometric Pressure				
Range	300 - 1100 hPa (-40°C - 85°C)			
Accuracy	±1 hPa			
Display & Configuration				
Display	2.13-inch Black&White E-Ink Scree	n		
Configuration	1. Mobile APP via NFC			
Computation	2. PC software via NFC or USB type	e-C port		
Physical Characteristics				
Power Supply	1. 2 × AA Alkaline battery			
	2. 5VDC USB type-C power supply			
Battery Life ¹	0.9-0.7 year	1.5-1.2 year		
(10 min interval, SF7-SF10)	0.8-0.6 year (Smart Mode Disabled ²) 1.3-1 year(Smart Mode Dis			
	1.1-0.9 year			
VOC Disabled	1-0.8 year(Smart Mode Disabled)			
Operating Temperature	0°C to +45°C			
Relative Humidity	0% to 100% (non-condensing)			
Dimension	105 × 70.4 × 21.2 mm (4.1 × 2.8 × 0.8 in)			
Mounting	Wall			

1. Tested under laboratory conditions and for guideline purposes only.

2. See <u>Smart Mode</u> on page 25.



1.4 Dimensions(mm)





If any of the above items is missing or damaged, please contact your Ursalink sales representative.

2.2 Product Overview

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3. Power Supply

3.1 Battery Installation

Remove the battery cover and install two new AA/LR6 batteries. Batteries can be replaced on the fly.



3.2 External Power Supply

AM100 series can be powered by type-C USB port (5V, 100mA). When battery and external power are both installed, external power will power the device first.



Note: External power can't be used for charging battery.



4. Sensor Installation

4.1 PIR Detection Range

There should not be any isolates or barriers in PIR detection range.



4.2 Installation Note

In order to ensure the best detection and LoRaWAN communication effect, it is recommended to install AM100 series as follows:

- > There should not be any isolates or barriers in PIR and light detection range.
- Do not mount the device where the temperature is below/above operating range and temperature varies greatly.
- Stay far away from any heat source or cold source like oven, refrigerator.
- Do not mount the device close to where airflow varies greatly like windows, vent, fan and air conditioner.
- > Do not mount the device upside down.
- Do not place the device right to the window or door. If you have to, you'd better pull the curtain.
- It is recommended to install at least 1.5m high from floor.





4.3 Wall Mounting

1. Attach the mounting sticker to the wall.

2. Mark the wall where the two mounting holes are according to the sticker's mark (around 88mm).

Note: The connecting line of two holes must be a horizontal line.

- 3. Drive two screws into wall at the marks using screw driver.
- 4. Mount the device on the wall.



5. Turn ON/OFF the Sensor

AM100 series can be turned ON/OFF via smartphone or computer with NFC (Near Field Communication) or button. Select one of following methods to turn on/off the device. **Note:** When AM100/AM102 is off, the screen staticly displays the following information which will not consume power.





5.1 Turn ON/OFF via Smartphone APP

1. Download Ursalink configuration APP "Toolbox" and install it on your smartphone. The smartphone must support NFC.

2. Enable NFC on the smartphone and open the APP.

3. Attach the smartphone with NFC area to the device.

Note: Ensure the location of your smartphone NFC area and it is recommended to take off phone case before using NFC.



- 4. Device information will be shown on the APP.
- 5. Switch the button of Device Status to turn on or off the device.

Status	Setting		
SN		6127A10	22508
Model		AM1	02-868
evice EUI	246	e124127a1	02250
irmware Ver	sion		V1.1
Hardware Ver	sion		V1.0
Device Status		ON	
Device Time	2020-03-18	13:46:37	SYNC
Join Status		De-ac	tivated
RSSI/SNR			-60/6
Temperature			25.6 ℃
Humidity			60.5 %
Activity Level	(PIR)		796
	Read		
Device		Template	1

6. Enter password (default password: 123456) and wait a few seconds until APP shows a success prompt.

Note: Keep the two devices close together and do not move them in order that you can get the best connectivity as possible when turning on or off via NFC. No response can be caused by long distance, wrong location or rapid movement.



evice EUI 24e124128	Ba177951		
irmware Version	V1.10		
Verify Password to continue	.3	Operate succes	isfully!
e ******	IC I	SN	6128A177951
Note: please approach the devi	ce ed	Model	AM102-868
s C	/0		
Booting	°C		

5.2 Turn ON/OFF via PC Software

- 1. Download Ursalink configuration software "Toolbox" and open the software.
- 2. Connect NFC reader to computer and attach the device to NFC reader.
- 3. Select type as NFC and serial port of NFC reader, then click "save".



4. Device information will be shown on the software.

AM100 Series User Guide					
	ToolBox V6.5		\ominus \otimes		
	Status >		Read Power Of		
Status	Model: Serial Number: Device EUI: Firmware Version:	AM100-915 6127A1040758 24e16127A1040758 01.02			
((⊙)) LoRaWAN Settings	Hardware Version: Device Status: Join Status:	1.0 On De-Activate			
CC) Device Settings	RSSUSNR: Tempurature: Humidîty: Activity Level (PIR): Illumination:	0/0 23.8°C 64.5% 80 72.1ux			
ے۔ Upgrade	Battery: Channel Mask:	41% 00#00000000000#00			

5.Click "Power On" to turn on the device or "Power Off" to turn off the device.

6.Enter password (Default password:123456) and click "Enter" to change device status.

atus >			Read
Firmware Version:	01.10		
Hardware Version:	1.3		
Device Status:	On		
Join Status:	Verify Password	×	
RSSI/SNR:	Password:	8	
Tempurature:		Enter	
Humidity:	Please put the NFC antenna close	se to the NFC reader.	

5.3 Turn ON/OFF via Button

Press and hold on the power button on the back panel until the screen change status (about 3-5s) to turn on or off the device.

Press and hold on the power button on the back panel for over 10s to reset the device to factory default.

6.Sensor Configuration

Ursalink AM100 series sensors can be monitored and configured via NFC technology. In order to protect the security of sensor, password validation is required when turning on/off the sensor or changing configuration. Select one of the following ways to configure AM sensors.

6.1 Configuration via Smartphone APP

Make sure Ursalink Toolbox APP is downloaded and installed on your smartphone.



6.1.1 Read Configuration

1. Open APP "Toolbox" and click "Read" to read current data of device.



2.Attach the smartphone with NFC area to the device until the APP shows a success prompt.

Read successfull	y!
SN	6128A1779510

Note: Read failure can be caused by long distance, wrong location or rapid movement.



6.1.2 Write Configuration

- 1. Open APP "Toolbox" and go to "Settings" page.
- 2. Change parameters as required and click "Write".



LoRaWAN Setting	gs		\sim
General Settings			~
Device Type			
AM102-868			•
Temperature Unit	(<u>i</u>)		
°C			•
Reporting Interval	-	20	+ min
Change Password	1		
Data Collection S	ettings		\vee
Calibration Settin	igs		\vee
Threshold Setting	gs		\sim
	Write		
]

3. Enter password (default password: 123456).

4. Attach the smartphone with NFC area to the device and wait a few seconds until APP shows a success prompt. The device will automatically re-join the network if LoRaWAN paramters are changed.

Note: Write failure can be caused by long distance, wrong location, or rapid movement.

AN		-	Write successfully!	
Terr	Verify Password to continue		LoRaWAN Settings	\vee
°C		•	General Settings	\wedge
Rep	Note: please approach the device	min	Device Type	
Scre	Writing		AM100-915	•
Char	nge Password		Temperature Unit (1)	
			℃	•

6.1.3 Template Settings

Template settings are used for easy and quick device configuration in bulk.

Note: Template function is allowed only for sensors with the same model and LoRa frequency band.

1. Go to "Template" page of APP and save current settings as a template.



Template		Templa	ate
। २			
empty template		empty ter	nplate
	\longrightarrow	New Ten Please enter ter AM102-868_2020031	nplate nplate name
		Cancel	ок
Save as a New Template			

- 2. Attach the smartphone with NFC area to another device.
- 3. Select the template file from Toolbox and click "Write".

Template		• Read Successful!	
	Q	LoRaWAN Settings	~
AM102-868_20200318 Last Modified Time: 2020-03-18 16:20:23		Device EUI	
		24e124128a108592	
		* APP EUI	
		24e124c0002a0001	
		* Port	- 85 +
		Join Type	
		ΟΤΑΑ	
		Application Key	
		*****	*****
		* Support Frequency	
Save as a New Template		W	ite
		Device	Template
a on o		201100	

4. Enter password of this device and keep the two devices close until the APP shows a success prompt.



• Write successfully!	
LoRaWAN Settings	\vee
General Settings	\wedge
Device Type	
AM100-915	•
Temperature Unit (1)	
ಲಿ	•

5. Slide the template item left to edit or delete the template.

	Template		
			Q
2020 e: 2020	0318 -03-18 16:20:23	Edit	Delete
>	EM500-SMT-EC5-868_20200319 Last Modified Time: 2020-03-19 12:19:06		
۶_	EM500-Ursalink	19 00 0F	

6.2 Configuration via PC

Make sure "Toolbox" is downloaded on your computer.

6.2.1 Read Configuration

1. Open software "Toolbox" and click "Read" to read current information of device.

Status >		Read Power Off
Device EUI:	24e16127A1040758	
Firmware Version:	01.02	
Hardware Version:	1.0	
Device Status:	On	
Join Status:	Activate	
RSSI/SNR:	-47/8	
Tempurature:	23.3°C	

2.Attach the device to the NFC reader until Toolbox shows "success".

Uplink Frame-counter:	16	
Downlink Frame-counter:	4	
Device Time:	2020-03-19 03:12:17 Sync	
Success	Firmware Version: 01.02	Hardware Version 1.0



Note: Failing to read can be caused by long distance, wrong location, or rapid movement.

Device Time:	2020-03-19 03:10:40	Sync
Fail	Firmware Ver	sion: 01.02

6.2.2 Write Configuration

- 1. Go to "Settings" page to change parameters as requirements and click "save".
- 2. Click "Write" and enter the correct password (default password: 123456).

VAN >			Read	Writ
Basic	Channel			
	Device EUI	24e124126a107457		
	Password	©		
	Please put the NFC and	enna close to the NFC reader.		
	ADR Mode			
	Save			

3. Press Enter key to write and attach the device close to NFC reader until "Write" button disappear. The device will automatically re-join the network if LoRaWAN paramters are changed.

Note: Keep the two devices close and don't move them in order that you can get the best connectivity as possible when writing data via NFC. Bad connection can be caused by long distance, wrong location, or rapid movement.

\mathbf{x}		Attention	
	\triangle	Write NFC Config Failed.	
		OK	

6.2.3 Upgrade

6.2.3.1 Upgrade Locally

- 1. Download AM firmware to your computer.
- 2. Go to "Maintenance -> Upgrade" page of Toolbox.
- 3. Click "Browse" and select the firmware from computer.
- 4. Click "Upgrade" and enter password of the device.

5. Press Enter key to start upgrade. Device will check if the firmware is correct. If it is correct, firmware will be imported to the device to upgrade.



Note: Keep the two devices close and don't move them in order that you can get the best connectivity as possible when upgrading. Failing to upgrade can be caused by long distance, wrong location, or rapid movement.

Model:	Verify Password	×
Firmware Version:	Password:	
Hardware Version		
FOTA:	Please put the NFC antenna close to the NFC read	er.
Update Locally	§新&常用固件/T1/11T1.0080.0120.0127.bin	Browse

6.2.3.2 FOTA

1. Make sure your computer can access the Internet.

2. Click "Check for Updates" to search for the latest firmware via computer Internet and upgrade.

Note: Keep the two devices close and don't move them in order that you can get the best connectivity as possible when upgrading. Failing to upgrade can be caused by long distance, wrong location, or rapid movement.

Upgrade >				
	Model:	AM100-915		
	Firmware Version:	01.02		
	Hardware Version:	1.0		
	FOTA:	Check for Updates		
	Update Locally		Browse	Upgrade
	Restore Factory Defaults	Reset		

6.2.4 Template and Reset

6.2.4.1 Template Configuration

- 1. Go to "Maintenance -> Template and Reset" page of Toolbox.
- 2. Click"Export" to save the current settings as a template.





Upgrade	Template and Reset
- 101 41	
lemplate	Export
Config File	Browse
Restore Factory	γ Defaults Reset

- 3. Click"Browse" to select the correct template from computer.
- 4. Click"Import"to import the template to the device.

6.2.4.2 Reset

Click the "Reset" to reset the setting to factory default.

Upgrade	Template and Reset		
Template	Export		
			_
Config File		Browse	Import
Restore Factor	y Defaults Reset	l.	



7. Sensor Parameters (for App and PC)

7.1 LoRa WAN Settings

7.1.1 Basic Settings-OTAA

Location:

Ursalink ToolBox (PC): LoRaWAN Settings \rightarrow Basic Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow LoRaWAN Settings



Basic Settings-OTAA			
Item	Description	Default	
App EUI	Enter the application EUI. The Network Server receives request and consults the entity associated with the APP EUI to validate the request. If permission is granted, it responds with a join-accept message.	24e124c000 2a0001	
Join Type	Select from: "OTAA" and "ABP". OTAA: Over-the-Air Activation. For over-the-air activation, end-devices must follow a join procedure prior to participating in data exchanges with the network server. An end-device has to go through a new join procedure every time it loses the session context information. ABP: Activation by Personalization. Under certain circumstances, end-devices can be activated by personalization. Activation by personalization directly ties an end-device to a specific network by-passing the join request - join accept procedure.	ΟΤΑΑ	
Application Key	Enter the application key. Whenever an end-device joins a network via over-the-air activation, the application key is used to derive the Application Session key.	5572404c69 6e6b4c6f526 1323031382 3	



	After sending the attribute/data/battery packets to the network server, the device will resend these packets if it does not receive ACK bit from the Network Server.	
Confirmed Mode	Note: If the device doesn't receive ACK for a long time, the device will resend confirmed packets 3 times at most. However, the device will resend attribute package all the time.	Disabled
ADR	ADR : Adaptive Data Rate. Enabled: The Network Server will adjust the datarate by MAC command. Disabled: Whatever how the signal quality is, the Network Server will not adjust the datarate of the device.	Enabled

7.1.2 Basic Settings-ABP

Location:

Ursalink ToolBox (PC): LoRaWAN Settings \rightarrow Basic Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow LoRaWAN Setting



Basic Settings-ABP			
Item	Description	Default	
App EUI	Enter the application EUI. The Network Server receives request and consults the entity associated with the APP EUI to validate the request. If permission is granted, it responds with a join-accept message.	24e124c0002 a0001	
Join Type	Select from: "OTAA" and "ABP". OTAA: Over-the-Air Activation. For over-the-air activation, end-devices must follow a join procedure prior to participating in data exchanges with the network server. An end-device has to go through a new join procedure every time it has lost the session context information. ABP: Activation by Personalization.	ΟΤΑΑ	



	Under certain circumstances, end-devices can be activated by personalization. Activation by personalization directly ties an end-device to a specific network by-passing the join request - join accept procedure.	
Device Address	Enter the device address. The device address identifies the end-device within the current network.	The last 8 digits number of SN
Network Session Key	Enter the network session key of the device. The network session key specific for the end-device. It is used by the end-device to calculate the MIC or part of the MIC (message integrity code) of all uplink data messages to ensure data integrity.	5572404c696 e6b4c6f5261 3230313823
Application Session Key	Enter the application session key of the device. The AppKey is an application session key specific for the end-device. It is used by both the application server and the end-device to encrypt and decrypt the payload field of application-specific data messages.	5572404c696 e6b4c6f5261 3230313823
Confirmed Mode	After sending the attribute/data/battery packets to the network server, the device will resend these packets if it does not receive ACK bit from the Network Server. Note: If the device doesn't receive ACK for a long time, the device will resend confirmed packets 3 times at most. However, the device will resend attribute package all the time.	Disabled
ADR	ADR : Adaptive Data Rate. Enabled: The Network Server will adjust the datarate by MAC command. Disabled: Whatever how the signal quality is, the Network Server will not adjust the datarate of the device.	Enabled

7.1.3 Channel Settings

Location:

Ursalink ToolBox (PC): LoRaWAN Settings \rightarrow Channel Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow LoRaWAN Settings

Note: Make sure the LoRa channel configuration of AM100 series matches the LoRaWAN gateway.



LoRa frequency configuration is as follows if the sensor LoRa frequency is one of EU433/EU868/RU864/IN865/AS923/KR920:

Status	Setting		
Support Frequer	псу		
EU868			*
	-	868.1	+
-	-	868.3	+
-		868.5	+
•	-	863.9	+
•	-	864.3	+
•	-	864.6	+
		863	+

LoRa frequency configuration is as follows if the sensor LoRa frequency is one of CN470/US915/AU915:

* Support Freq	luency	
US915		-
Enable Channe	el Index (1)	
0-71		
Index	Freque	ncy/MHz 🤃
0 - 15	902.3 -	905.3
16 - 31	905.5 -	908.5
32 - 47	908.7 -	911.7
48 - 63	911.9 -	914.9
64 - 71	903.9 -	01/ 2

Enter the index of the channel to be enabled in the input box, separated by commas. **Example:**

1, 40: Enable Channel 1 and Channel 40

1-40: Enable Channel 1 to Channel 40

1-40, 60: Enable Channel 1 to Channel 40 and Channel 60

All: Enable all channels

Null: Indicates that all channels are disabled

Note:

For US915:

64 channels numbered 0 to 63 utilize LoRa 125 kHz BW starting at 902.3 MHz and incrementing linearly by 0.2 MHz to 914.9.



8 channels numbered 64 to 71 utilize LoRa 500 kHz BW starting at 903.0 MHz and incrementing linearly by 1.6 MHz to 914.2.

For AU915:

64 channels numbered 0 to 63 utilize LoRa 125 kHz BW starting at 915.2 MHz and incrementing linearly by 0.2 MHz to 927.8.

8 channels numbered 64 to 71 utilize LoRa 500 kHz BW starting at 915.9 MHz and incrementing linearly by 1.6 MHz to 927.1.

For CN470:

80 channels numbered 0 to 79 utilize LoRa 125 kHz BW starting at 470.3 MHz and incrementing linearly by 0.2 MHz to 486.1.

16 channels numbered 80 to 95 utilize LoRa 125 kHz BW starting at 486.3 MHz and incrementing linearly by 1.6 MHz to 489.3.

7.2 Device Settings

7.2.1 General

Location:

Ursalink ToolBox (PC): Device Settings \rightarrow General

Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow General Settings

Device General Settings			
Item	Description	Default	
Device Type	Show the type of the device.	Null	
Reporting Interval	The sensor reports the sampling data at regular intervals. Range: 5-30 (mins)	10	
Screen Smart Mode	Screen display stops updating data for power saving. When Activity Level (PIR) = 0 and lasts for 20 minutes, screen will go to sleep mode until detected Activity Le vel (PIR) > 0.	Enabled	
Temperature Unit	Configure the unit of temperature shown on the screen and status page. Note: Threshold settings should be changed after changing unit.	Ĉ	
Change Password	Change the password used for changing device status and writing configuration.	Disabled	

7.2.1 Data Collection

Select the items you need to collect or not to collect. Location:

Ursalink ToolBox (PC): Device Settings \rightarrow Data Collection Settings



Data Collection Settin	igs 🕐	
Temperature		
Humidity		
Activity Level (PIR)		
Illumination		

Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow Data Collection Settings

Status	Setting	Upgrade
Data Collection	Settings	~
When disabled, the data.	e device will no long	ger collect the
Temperature		
Humidity		•
Activity Level (F	PIR)	
Illumination		
C02		•
туос		
Barometric Pres	ssure	•

Note: The data displayed on the screen is the current value. The data reported to the gateway is the average of the reporting interval.

7.2.2 Data Calibration

Location:

Ursalink ToolBox (PC): Device Settings \rightarrow Data Calibration Settings Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow Data Calibration Settings

Data Calibration Settings				
Item	Description	Default		
Enable	Enable calibration.	Disable		
Current Raw Value	The current value.	Null		
Calibration Value	The error value used for calibration. Range: -65535 to +65535	Null		
Calibration button	Click to reset value to 0.	Null		
Final Value	Adjusted value.	Null		
Temperature Calibration	Enter the calibration value for temperature. Note : only one decimal is allowed.	Null		



Humidity Calibration	Enter the calibration value for humidity. Note: only integer is allowed.	Null
Illumination Calibration	Enter the calibration value for illumination. Note: only integer is allowed.	Null
TVOC Calibration (AM102 Only)	Enter the calibration value for TVOC. Note: only integer is allowed.	Null
CO2 Calibration (AM102 Only)	Enter the calibration value for CO ² . Note: only integer is allowed.	Null
Barometric Pressure Calibration (AM102 Only)	Enter the calibration value for barometric pressure.	Null

Note: Calibration value should be re-configured if you re-start one item collection in Data Collection page.

7.2.3 Threshold

Location:

Ursalink ToolBox (PC): Device Settings \rightarrow Threshold Settings Ursalink ToolBox (APP): Device \rightarrow Settings \rightarrow Threshold Settings

Threshold Setting	S	
Item	Description	Default
	Enable: The device will send the latest temperature	
Temperature	value to Network Server if the temperature goes	Disabled
	above/below temperature thresholds.	
Over	The maximum temperature threshold.	Null
Below	The minimum temperature threshold.	Null

Example: Set the "Lockout Time" for 10s, "Duration" for 5s.

The device will report the detected value immediately when the value reaches the threshold and last for 5s. After that, the device will check the detected value every 10s, and report the value again if it reaches the threshold and last for 5s.

8.Sensor Management via Ursalink Cloud

Ursalink cloud is a comprehensive platform that provides multiple services including device remote management and data visualization with the easiest operation procedures.

8.1 Ursalink Cloud Registration

Register and log in Ursalink Cloud. Ursalink Cloud URL: <u>https://cloud.ursalink.com/login.html</u>



8.2 Add a Ursalink LoRaWAN Gateway

1. Enable "Ursalink" type network server and "Ursalink Cloud" mode in gateway web GUI. **Note:** Ensure gateway has accessed the Internet.

Status	General	Radios	Advanced	Custom	Traffic	
Packet Forwarder	General Setting					
Network Server	Gateway EUI Gateway ID	24E124F				
Network	Frequency-Sync	Disabled	2	•		
System	Multi-Destination					
Maintenance	IC)	Enable	Туре	Server Address	Operatio n
арр 🕨	0		Enabled	Ursalink	localhost	
Status	General	- Ар	plications	Profiles	Device	Packets
Status Packet Forwarder	General	Ap Setting	oplications	Profiles	Device	Packets
Status Packet Forwarder Network Server	General General Enable Ursalink (Setting	oplications ☑	Profiles	Device	Packets
Status Packet Forwarder Network Server Network	General General Enable Ursalink (NetID	Setting	oplications	Profiles	Device	Packets
Status Packet Forwarder Network Server Network	General General Enable Ursalink (NetID Join Dela	Setting	oplications ✓ 010203 5	Profiles	Device] sec	Packets
Status Packet Forwarder Network Server Network	General General Enable Ursalink (NetID Join Dela RX1 Dela	Setting	 Poplications O10203 5 1 	Profiles	Device sec sec	Packets
Status Packet Forwarder Network Server Network System Maintenance	General General Enable Ursalink O NetID Join Dela RX1 Dela Lease Tin	Setting Cloud y y	Deplications	Profiles	Device] sec] sec] hh-mm-ss	Packets



2.Go to "My Devices->Gateway" of Ursalink Cloud and click "Add" to add gateway to Ursalink Cloud via SN.

🕤 Ursalink Cloud							demo@ur	salink.com 🧃
 Dashboard 	Add Delete	Refresh					Search	Q
My Devices	🔳 Status 🖨	Name 👙	Model	Partnumber 🜲	Serial Number 👙	Version 🖨	Update Time 👙	Operation
🔛 Gateway		Add Device			×	Firmware:80.0.0.62 Hardware:V1.1	2020-03-30 09:00	⊚ >
🖄 Мар						Firmware:80.0.0.62 Hardware:V1.1	2020-03-30 09:00	(a)
m Triggers			SN					
Event Center			Name					
 Sharing Center 		(i) Pleas	e enable Ursalink	Cloud mode on gatev	vay first.			
Device Groups				_				
A Me				Cancel	Add			

3. Check if gateway is online in Ursalink Cloud.

② Dashboard	Add	Delete	Refresh					Search	Q
My Devices		Status	Name 👙	Model	Partnumber 🗍	Serial Number 👙	Version 👙	Update Time 👙	Operation
🔛 Gateway		\odot	231	UG85-L00E- EU868	L00E-EU868	62179	Firmware:80.0.0.62 Hardware:V1.1	2020-03-30 09:00	@ >
🖄 Map		\odot	621793195782	UG85-L01CE- CN470	L01CE-CN470	62175110	Firmware:80.0.0.62 Hardware:V1.1	2020-03-30 09:00	
if Triggers									

8.3 Add AM100/AM102 to Cloud

1. Go to "Device->My Devices" and click "Add Device". Fill in the SN of AM100/AM102 and select associated gateway.

SN	6127
Name	
Associated Gateway	231 (6217 ************************************
Device EUI	24e124127/
Application Key	5572404c696e6b4c6f526132303138

2.After AM100/AM102 is connected to Ursalink Cloud, Click > or "History Data" to check the data on Ursalink cloud.



Salink Cloud			demo@ursalink.com
 Dashboard 	🔲 Status 🖨 🛛 Name 🖨	Interface Status 🛊	Update Time 🗍 Operation
My Devices	UC1114 Node I/O C SN: 611693925791	DI 1: Fan: 💁 DI 2: Light: 🚳	2020-04-07 20:49 🐼 >
🖄 Gateway	1152 SN: 612293811165	DI_1: O DO_1: O	2020-04-07 20:27 🗔 >
m Triggers ⊠ Event Center	Model: UC1152 AM100-Meeting Ro	Temper 21.5 °C Humidity: 56.5 %	
 Sharing Center 	SN: 6127A1358696 Model: AM100	Activity 93 Illuminat 15 lux	2020-04-07 20:48 💮 🗸
Device Groups	RSSI: -71dBm SNR: 8.5dB Battery: 0% Group Name: -	-O- Temperature -O- Humidity -O- Activity Lev	el (PIR) - O- Illumination
Group Name: - Associated Gateway: 621 Device EUI: 24e124127A1 Firmware: v1.1 Hardware: v1.0	Associated Gateway: 621793121298 Device EUI: 24e124127A135869 Firmware: v1.1 Hardware: v1.0		1990 2048
	AM102 SN: 6128A1035795 Model: AM102	04-07 04-07 04-07 Temper 28.5 °C Humidity: 62.5 % Activity 0 Illuminat 24 lox CO2: 624 ppm TVOC: 0 ppt Barome 101.0 kPa	04-07 04-07 2020-04-07 16:38 💿 >
		Copyright 2020 Xiamen Ursalink Technology Co., Ltd.	

			Copyright 2020 Alamen Orse	allik lechnology Co., Etc.		
Go to "Dashboa	rd" page to ac	ld widgets to	the dashboa	rd.		
🕤 Ursalink Cloud					den	no@ursalink.com
Oashboard	Smart Office				Add	Edit
My Devices Gateway	20:55:11		UC1114 Node I/O Con	UC1114 Node I/O Con	Meeting Room1-Illumi	
Map fin Triggers			ON 20:49:17	ON 20:49:17	15 _{Iux} 20:48:04	
Event Center	AM100-Meeting Room	AM100-MeetingRoom	Meeting Room1-Battery	Meeting Room1-Activit	Alarm List	
Sharing Center	21.5	6 5%	0~	(保 93	Intruder? Condition A: AM100-Mee (6127A1358696)'s Activi	eting Room1 tv Level (PIR) is 93
Device Groups	21.0°C 300.0% 20.48.04 20.48.04 Meeting Room1		20:48:04	20:48:04	greater than 10.	
R Me			Temp Compare Temperature Temperature Y1 25		Time Range: 18:00 - 08:45 (UTC+8), even day 2020-04-07 20:48:04	
		1.1.1.1	Copyright 2020 Xiamen U	rsalink Technology Co., Ltd.		

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